

## ABSTRACT

The assay plate includes a substrate having an substrate surface and at least one raised pad extending from the substrate surface. The raised pad includes a substantially planar sample receiving surface configured for holding 5 a sample thereon for *in situ* experimentation. The sample receiving surface preferably has at least one sharp edge at the junction between a sidewall coupling the sample receiving surface to the substrate surface. The sample receiving surface is preferably a circle, oval, square, rectangle, triangle, pentagon, hexagon, or octagon shape that is sized to hold a predetermined 10 volume of the sample. A method of using the above described assay plate is also provided. Once a raised pad extending from a substrate is formed, a sample is deposited on the raised pad. Experiments are subsequently performed using the sample on the raised pad.